Adopting ATLAS DB to Run IIb Silicon Sensor

The sensor DB, so far, was based on Excel, since Hamamatsu uses Excel as default.
If we are to use ATLAS DB, we require anyway to adopt the test data structure to it (Excel itself does not fit to ATLAS DB). Under this condition and since sensor delivery is due in a month, we have not enough time to perform a big revision of the orginal ATLAS DB: we need to fix the data structure as soon as possible.

The general procedure of data uploading would be

1. Hamamatsu or Tsukuba/Korea/FNAL
    - registers the sensor
    - uploads manufacturer data

The both can be done by preparing a text (an example is in this note) and access to the DB via Java script through Web.

2. Testing Institute
    - uploads the test data of the registered sensors

This also can be done via Web. Skelton texts are in this note.

3. Shipping

Shipping sensors is handled in ATLAS by DB as well. One requires to send “Receive” data. Uploading test data for not-”received” sensors is not permitted.

4. Final qualification

Certain test fields (Leak current at 150V and 350V, visual inspection) are checked by DB and final qualification is provided automatically. (This means everybody needs to upload data as requested)

The ATLAS DB adoption to CDF would involve:

- Trim off unnecessary parts (not now?)
- Tune parameters (e.g. strip number is not integer, 150 and 350V are not suitable)
- Modify Java scripts

DATA UPLOAD in text format

%NEWTEST
SERIAL NUMBER: S0012
TEST MADE BY: KH
LOCATION NAME: Tsukuba
TEST DATE:5/20/2003
PASSED: yes
PROBLEM: none
Run number: 03

This part (=header) is mandatory
READ LINES: necessary
GREEN LINES: optional

One or mutliple sets of text describing the test results. Possible sets are listed below.

full depletion voltage
%DetVDep
TEMPERATURE: 21
VDEP: 150
Radiation dose: 0

defect channels
%DEFECT
DEFECT NAME: Implant-open
FIRST CHANNEL: RU21
LAST CHANNEL: RU21
url:

DEFECT name:
Open
Short
Oxide-Punchthrough
Pinhole
Resistor-Break
Implant-Short
Implant-Open

comment
%Comment
This sensor is intensively probed and there are many probe traces.

visual inspection
%VisInspec
Large crack. Photos in http://… /scratch.gif

Web link to data
%Web_link
DESCRIPTION: AC scan
URL: http://hep-www….

#create file and store rawdata
%Test_Rawdata
FILENAME: IVS0012_03.dat
#IV
10 35
20 46.7
…

ATLAS Integer[1,1536]
—> CDF string

There are many others, but the above are enough.

Manufacture Data:

%ITEM
SERIAL NUMBER S0012
Mfr serial number STN39189-00012
%TEST
TEST DATE (DD/MM/YYYY) 10/03/2005
PROBLEM NO
PASSED YES
Run number 20220900200016
%DATA
TEMPERATURE (C) 27
I_LEAK500V (microA) 0.088
I_LEAK700V (microA) 0.126
Substr Origin 003
Substr Orient 111
Substr R Upper (kOhm.cm) 8
Substr R Lower (kOhm.cm) 4
Thickness (micron) 289
Vdep (V) 65
R Bias Upper (MOhm) 1.62
R Bias Lower (MOhm) 1.29
%COMMENT
%DEFECT
#DFEFCT NAME FIRST CHANNEL LAST CHANNEL
Implant-Break
Implant-open
Implant-short
Resistor-Break
Oxide-Punchthrough
Short
Open

List of dead channels

%RAWDATA
Filename IVS0012_001.dat
#IV
10 35
20 46.7
…
1000 200

IV rawdata

Filename CVS0012_001.dat
#CV
10 O.L.
15 O.L.
20 2590
25 2230
…
300 1400

CV rawdata